Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Digital Audio Broadcasting Systems	)	MM Docket No. 99-325
And Their Impact On the Terrestrial Radio	)	
Broadcast Service	)	

COMMENTS OF THE NATIONAL ASSOCIATION OF BROADCASTERS

The National Association of Broadcasters (NAB)[1] hereby responds to the Commission's request for public comment on the National Radio Systems Committee (NRSC) digital audio broadcasting (DAB) standard entitled "In-band/On-channel Digital Radio Broadcasting Standard NRSC-5" (NRSC-5).[2] NAB urges the Commission to adopt the NRSC-5 standard as the foundation of its technical rules for hybrid digital/analog radio operations in the U.S as expeditiously as possible. We further urge the Commission to complete swiftly its outstanding work on permanent authorization, final operational requirements, licensing and service rules changes for AM and FM digital audio broadcasting.

These actions will set the future of free, over-the-air radio broadcasting and ensure that the free radio service available to America's listening public will be digitally "enhanced," and of high audio quality with the capability for innovative digital services.

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[1] NAB is a nonprofit incorporated association of radio and television stations and broadcast networks. NAB serves and represents the American broadcasting industry.
[2] *Public Notice*, MM Docket No. 99-325, rel. June 16, 2005.

That will, in turn, permit free over-the-air radio broadcasters to better serve listeners and compete in an increasingly digital world. Importantly, FCC action to finalize its rules and adopt a single technical standard will promote the continued roll-out of digital broadcasting by providing broadcasters, equipment manufacturers and consumers with the confidence that IBOC is *the* next generation of ubiquitous, free radio service.

Incorporation of NRSC-5 into the Commission's rules for terrestrial DAB service will solidify the single standard approach that the Commission has determined will best bring an enhanced digital listening experience to America's radio listeners and broadcasters, both AM and FM. At the time of the Commission's unanimous selection of in-band, on channel (IBOC) technology for the introduction of digital radio, then-Commissioner Martin and Commissioner Abernathy commended the industry for developing a model that will not require allocation of additional spectrum and that will allow for an efficient transition to digital radio, during which time consumers will be able to receive their current services without disruption *and* benefit from development of innovative offerings.[3] At that time, the Commission selected iBiquity Digital Corporation's hybrid AM and FM IBOC systems evaluated by the NRSC as the *de facto* standard for interim digital operation and concluded that adoption of a single DAB transmission standard will facilitate the development and commercialization of digital services for terrestrial radio.[4] The Commission solicited industry assistance in the development of a formal AM and FM standard through a public and open standard-

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[3] *First Report and Order*, MM Docket No. 99-325, 17 FCC Rcd 19990 (2002) *(First Report and Order*), Joint Statement of Commissioners Kathleen Q. Abernathy and Kevin J. Martin.

[4] *First Report and Order*, *supra.*

setting process and in this regard pointed to the NRSC's formally initiating such a process.[5]

Now, the NRSC has adopted NRSC-5 documenting iBiquity's AM and FM system and NAB and CEA, as co-sponsors of the NRSC, have transmitted this single IBOC standard to the FCC. NAB, as co-sponsor of the NRSC and as the trade association representing free over-the-air radio broadcasters, endorses NRSC-5 and the NRSC process evaluating and documenting the iBiquity IBOC standard and commends it to the Commission as the basis for its technical rules for digital radio operations.

The NRSC

The National Radio Systems Committee is a technical standards-setting organization jointly sponsored by NAB and the Consumer Electronics Association. Its purpose is to study, develop and make recommendations for technical standards that relate to radio broadcasting and the reception of radio broadcast signals. The NRSC is a forum where broadcasters and receiver manufacturers and other interested parties can work together towards solutions to common problems in radio broadcast systems.

Anyone with a business interest in the technology being investigated by the NRSC is welcome to join the Committee and participate in its activities. Members of the NRSC are generally engineers, scientists or technicians with in-depth knowledge of the subject being studied. Government representatives may attend NRSC meetings as active participants or observers. Typically, the NRSC refers the outcome of its work to the FCC as recommended modifications of FCC technical rules.

[5] *Id*. at ¶1, 44.

The FCC has long recognized the important role of the NRSC. The NRSC began studying ways to improve radio broadcasting via technical means in the 1980s. Its first efforts resulted in a series of voluntary technical standards designed to reduce interference and improve audio quality on the AM broadcast band, and subsequently the NRSC RF mask specification was incorporated into the FCC rules.

NRSC has continued its efforts to improve the industry's ability to innovate. In the early 1990s, the NRSC developed the Radio Broadcast Data System (RBDS) standard (also referred to as NRSC-4). Earlier this year, the NRSC adopted an updated version of this standard (now called NRSC-4-A) which includes a new method for displaying song artist and title, and in general facilitates the harmonization of program associated data (PAD) broadcast on analog FM signals using RDS and hybrid IBOC digital signals using NRSC-5.

The NRSC IBOC Standard

The NRSC IBOC standard recently submitted to the FCC follows years of NRSC evaluation of digital radio technologies. The NRSC DAB subcommittee and its working groups were comprised of representatives from a wide cross-section of diverse entities with interests in the work of the committee. NRSC work on IBOC has been open, inclusive, lengthy, exhaustive and conducted under rigorous due process procedures.

The NRSC DAB Subcommittee's IBOC evaluation efforts culminating in the Evaluation of the Ibiquity Digital Corporation IBOC System (Part 1 – FM IBOC; Part 2 – AM IBOC) and the NRSC-5 standard itself are the latest in a series of similar evaluations done by the NRSC DAB Subcommittee, starting in the 1995-96 timeframe on "first generation" IBOC systems, then in 2000 when a "phase 1" evaluation of "next

generation" IBOC systems was conducted.[6] The DAB Subcommittee's AM and FM Evaluation Reports represent the most comprehensive evaluation efforts of the NRSC's DAB activities and were based on a full set of AM and FM IBOC system laboratory and field test data collected in strict accordance with NRSC-developed test procedures.

Following preparation and submission to the Commission of the AM and FM Evaluation Reports, the DAB Subcommittee IBOC Standards Development Working Group (ISDWG) began working in earnest to specify and document iBiquity's IBOC system. This process, spanning nearly 2 1/2 years with over 30 working group meetings, involved working closely with iBiquity engineers to develop a series of "reference documents" which describe the details of the system necessary for those "skilled in the art" to construct compatible devices, as well as the Standards document itself which ties these reference documents together and provides a high-level description of the IBOC system. A broad cross-section of industry talent participated in this effort, including broadcasters, consulting engineers, receiver manufacturers, government participants, integrated circuit manufacturers and data service providers.

The draft NRSC-5 Standard was then submitted to the DAB Subcommittee for review during which time comments submitted by NRSC participants were fully vetted by the group. A vote to adopt NRSC-5 as an NRSC Standard was taken at the DAB Subcommittee meeting held on April 16, 2005 and passed with strong support (not a single "no" vote was cast).

[6] The NRSC's "phase 1" IBOC evaluation was based on preliminary performance data submitted by Lucent Digital Radio (LDR) and USA Digital Radio (USADR); detailed reports on the results of these evaluations were published by the NRSC.

The Commission Should Swiftly Adopt the IBOC Technical Standard

NAB, along with the vast majority of commenters in the IBOC proceeding, has long advocated adoption of a single IBOC transmission standard.[7] A single standard promotes confidence, for all affected participants, in a transition to digital operations of a fully-developed mass media broadcast service, such as digital television, and now digital radio. Thus, broadcasters, broadcast equipment manufacturers, receiver manufacturers and consumers, as well as the related industry entities such as integrated circuit manufacturers and data service providers, all can have the certainty to confidently invest and participate in the digital radio transition. This is true both in the near term, as the transition to digital radio commences, as well as for the long-term evolution and maturation of this new service. Commission adoption of an industry-developed standard is the clearest, most practical and technically fruitful path to achieving a Commission IBOC technical standard.

The Commission has agreed with NAB and others advocating adoption of a single DAB transmission standard and has stated its belief that adoption of a standard will facilitate an efficient and orderly transition to digital radio.[8] The Commission has noted that this approach "is particularly warranted at a time when broadcasters face competitive challenges from various digital media and when many station owners link their continued viability to the prompt introduction of a digital transmission technology."[9]

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[7] NAB Comments, RM-9395, filed Dec. 23, 1998; NAB Comments, MM Docket No. 99-325, filed Jan. 24, 2000; NAB Reply Comments, MM 99-325, filed Feb. 22, 2000; NAB Comments, MM Docket No. 99-325, filed Feb. 19, 2002; NAB Comments, MM Docket No. 325, filed June 16, 2004.

[8] *First Report and Order*, *supra*, at ¶ 44.

[9] *Id*.

With Commission receipt of the IBOC AM and FM standard from the NRSC and after consideration of comments and reply comments now being filed, the Commission should be in a position to incorporate the NRSC standard into its rules as *the* technical transmission standard for digital radio broadcasting. NAB urges swift FCC action in this regard. As also noted above, NAB urges the Commission to promptly issue final authorization for IBOC operations, as well as final operational requirements and procedures and licensing and service rules.

With these actions, digital radio can surely and swiftly continue its roll-out in terms of ever-increasing numbers of stations in digital operation, of IBOC product in stores, homes and automobiles and development of innovative services and programming to meet the needs and demands of America's digitally-aware and sophisticated listening public. NAB believes that we are entering a new and exciting radio world, with free over-the-air radio broadcasters standing ready to meet the challenges of the digital age and serve their audiences with exciting digital sound and other services.

Respectfully submitted,

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